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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Sebastian Bohm

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EXAMINER

ALEXANDER, LYLE

ART UNIT

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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/027,516	Applicant(s) BOHM ET AL.	
	Examiner Lyle A. Alexander	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22, 24-41, 48 and 49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 24-41 and 48-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/9/09</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-22, 24-41 and 48-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original specification does not teach the claimed diameter of the port being less than the diameter of the microchannel and does not teach "none of the liquid enters the fluid interface port". Also, it is not clear what structure is intended by "virtual wall."

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-22, 24-41 and 48-49 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims (1-45) of copending Application No. 10/057,354. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are directed to a microfluidic device having a virtual wall.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-22, 24-41 and 48-49 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-26 and 1-124 of U.S. Patent No. 6,877,528 and 7,179,423 respectively. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are directed to a microfluidic device having a virtual wall. This patent is silent to the claimed dimension of the interface port.

The court decided In re Rose (105 USPQ 237) “ ... the size of the article under consideration which is not ordinarily a matter of invention .” Additionally, it is desirable to make microfluidic devices as small a possible to minimize the volumes of reagents and samples. This minimization saves in the cost of the reagents and conserves the samples for further testing.

It would have been within the skill of the art to modify USP 6,877,528 and have channels and ports in the device meeting the claimed size of the channels and as the dimensions chosen for the channels would not ordinarily be a matter of invention.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-22, 24-41 and 48-49 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fuchs (USP 5,757,482).

See the appropriate paragraph of the 11/9/06 rejections.

Response to Arguments

Applicant's arguments filed 3/9/09 have been fully considered but they are not persuasive.

Applicants' traverse the finality of the 9/9/08 Office action on the basis the 7/9/08 amendments raised new issues. The Office maintains the finality of the 9/9/08 Office action was proper. The 7/9/08 amendments did not add significant limitations that required further consideration, search and a new grounds of rejection. Rather, the 9/9/08 Final Office action maintained the same grounds of rejection as the previous 1/10/08 Final Office action. As evidenced that the identical grounds of rejection from previous 1/10/08 Final was applied in the 9/9/08 Final Office action, the Office maintains no new issues were raised by the 7/9/08 amendments and the 9/9/08 Final Office action was proper.

Double Patenting Rejections

Applicant traverses the non-statutory and statutory obviousness-type double patenting rejections. However, Applicants state upon identification of allowable subject matter, terminal disclaimers will be filed. No allowable subject matter has been

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identified and the Office maintains the non-statutory and statutory obviousness-type double patenting rejections are proper.

35 U.S.C. 112 Rejections

Applicant's state page 21 lines 4-5 and figure 2a clearly teach the diameter of the port is less than the diameter of the micro-channel. The Office agrees there is support for the diameter of the port being less than the diameter of the micro-channel. Additionally, the Office has consulted page 5 of the specification and notes the specification teaches the "... the lateral dimensions of fluid interface port(17) are substantially identical to or less than the diameter of the microchannel(3) ...". However, none of this language support the instant claim language of "significantly smaller." The Office maintains the claimed "significantly smaller" is not taught or supported by the original specification. Additionally, it is not clear if the claimed "depth" is analogous to the specification's teaching of "diameter." Clarification could be achieved by using the language from the specification on page 21 lines 4-5 verbatim.

Applicants state page 21 lines 4-28 support the claim language "... the virtual wall is formed, such that none of the liquid enters the fluid interface port". The Office has considered this portion of the specification and believes it teaches the "dead volume" is the volume of liquid not flushed through the fluid interface and is "... most preferably about zero." There is no discussion in this portion of the specification relating to the virtual wall and the Office maintains the above 35 USC 112 first paragraph rejections. Rather, the original specification (e.g. see page 16 lines 10-20) teaches adding fluid through the port(17) which appears to contradict the new limitations.

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Claim Rejections Under 35 U.S.C. 102

Applicant states the independent claims 1,15,48 and 49 specify that none of the liquid in the microchannel flow into the interface port when the virtual wall is formed. In light of the above 35 USC 112 first paragraph issues, it is onto clear if there is support in the original disclosure for this language. Even if there were support, the pending independent claims are directed to a “Method of forming a fluid interface port ...”, “ A Microfluidic structure ...”, “ A microfluidic structure ...” and “ A method of forming a fluid interface port ...” respectively. All of the pending claims are directed to either a method of making a structure or the structure alone. None of the claims are directed to a method of using the structure. The Office maintains the cited prior art teaches the claimed structures and methods of making the claimed structures and have been properly read on the claims. The argued issue of the "virtual wall" is not a structural limitations of the device, but rather seems to relate more closely to the method of using the device which is not presently claimed. The Office maintains all of the rejections of record are proper.

Applicants state Fuchs fails to teach the claimed limitations “smaller than.” The Office maintains this claim language is sufficiently broad to have been proper read on Fuchs. Clarification could be achieved by actually claiming the dimensions.

Applicants state Fuchs fails to teach the "depth" of the port is “substantially smaller than the diameter of the fluid interface port”. The Office maintains the language “smaller than” is sufficiently broad to have been properly read on the cited prior art.

Applicants state Fuchs fails to teach the "port" is separate from the terminal ends. The instant claim language of "... the fluid interface port being separate from the first terminal end and the second terminal end ..." is not specific as to how the port is separated (e.g. by location or fluidically?). The Office maintains this language is sufficiently broad to have been properly read on the instant claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lyle A. Alexander whose telephone number is 571-272-1254. The examiner can normally be reached on Monday, Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Lyle A Alexander/

Primary Examiner, Art Unit 1797